clumps of protoplasm, removed from either a unicellular plant or animal, in which no nucleus is present, although capable of living, and retaining their irritability and power of movement for some time, yet neither grow, nor form a cell membrane, nor have the same power of digesting bodies introduced into their substance, as is possessed by a clump of protoplasm which has retained the nucleus. The nutritive activity of the protoplasm would appear, therefore, to be under the influence of the nucleus.

The volume concludes with a chapter on the cell in its relation to theories of heredity. The author, as is now the prevailing opinion amongst biologists, contends that the nucleus is the conveyer of hereditary properties, and that the offspring is a mixed product of both its parents, derived from the ovum and the sperm cell. In the course of this chapter he discusses the views of Darwin, Spencer, Nägeli, Weismann, and De Vries, and suggests the employment of the term "Idioblasts" for the minute elementary particles, which Darwin called "gemmules" in his hypothesis of pangenesis, and which he conceived to be capable of transmitting hereditary characters to succeeding generations.

THEORETICAL MECHANICS.

Elementary Mechanics of Solids and Fluids. By A. L. Selby, M.A. (Oxford: Clarendon Press, 1893.)

AT a period when we are bound to recognize the influence exerted by the examinations of the various educational institutions and of those controlled by other more or less influential examining bodies, we may be excused, on the arrival of a new work, for stating whether or not, and to what extent, it is adapted to their requirements. The book before us does not appear to have been intentionally written for examination purposes, and perhaps on this account it will be all the more welcome. Its purpose, however, is very distinct. It is intended for those students who are desirous of reading mechanics as an introduction to a study of physics. So far, therefore, as its suitability for examinations is concerned, we can heartily recommend it to those who wish to qualify in this particular branch of science, while at the same time it will be read with great benefit by that class of students who desire a thorough knowledge of the portions generally included under the head of Theoretical Mechanics.

In the study of such subjects as the book treats of, the amount of knowledge which the reader may have of mathematics will, to a considerable extent, be a measure of his success. The author expresses a hope that an acquaintance with the elements of algebra and geometry will suffice; but, while not wishing to reduce the usefulness of the book, but rather to direct it into proper hands in which it will be read with greater advantage, we think it would be nearer the mark to say that a thorough knowledge of elementary algebra and a considerable acquaintance with elementary trigonometry are necessary. Certainly the definitions of the trigonometrical ratios will be found in an appendix, but it will be far better if the student has lived with and used these for some time.

Possessing these requirements, he will appreciate and even admire the broad, yet concise nature of the treatment generally; and with regard to this matter we may say that we are unacquainted with any elementary text-book better calculated to create a desire for precise and full ideas. That this is requisite for a study of physics perhaps more than any other subject, no one will deny.

The first chapter of the book is occupied with a consideration of Kinematics, and in it will be found a careful exposition of the displacement, velocity, and acceleration to which a body may be subjected, due attention being drawn to what is necessary for a full representation of them. The appendix following this contains some geometrical theorems and definitions for subsequent use. Then follow the usual chapters on the laws of motion, work, and energy, centre of gravity, moments of inertia, and simple machines. A chapter on gravitation will be read with interest, preceded as it is by an explanation of some of the geometrical properties of the ellipse. Kepler's laws of planetary motion are dealt with, in addition to other relevant matters which do not usually find their way into elementary text-books.

The subject of elasticity also receives a somewhat more extensive treatment than is usually given to it. The various kinds of stress and strain which a body may undergo are explained, together with the relation between stress and strain. At the end of the book we find what is included under the second head of the title. The various principles and laws which refer to fluids, and some of the machines and instruments which depend on them for their action, are enumerated and explained, while the interesting subject of capillarity has a separate chapter devoted to it.

To an appreciative reader it is a source of satisfaction to observe the care the author has exercised when dealing with the important matter of definitions and units—fundamental and derived. A chapter on units and their dimensions is furnished at the end.

A good selection of examples, bearing on the matter treated therein, will be found at the close of the chapters.

Many portions of the book are characterized by a decided freshness of treatment, and we have little doubt that the careful reader will find many little points which are satisfying, in that they tend to widen the somewhat restricted views he may have previously held, and these will be all the more apparent should his mind be of a mathematical turn.

G. A. B.

OUR BOOK SHELF.

Magnetism and Electricity. By R. W. Stewart. (London: W. B. Clive and Co.)

THE book forms one of the University Correspondence College Tutorial Series, and is "primarily written for the use of candidates for the Matriculation, Intermediate Science, and Preliminary Scientific Examinations of the University of London." The author is evidently familiar with the difficulties which usually occur to students, and the best portions of the book are those in which efforts are made to elucidate some of the more general errors. The descriptions of apparatus and phenomena are, however, generally rather short and meagre, while the diagrams are frequently inadequate for a work of this sort. Little is written to help the beginner to perform experiments for himself; in fact, descriptions of many important instruments are omitted—for example, the Wheatstone

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Bridge—and to students having no access to a laboratory little satisfaction will be given when told : "The details of the construction and practical use of the different forms of Wheatstone's Bridge used in the measurement of resistance are best learnt in the laboratory, and for this reason we shall not give any further description of the arrangement."

In many instances the student is driven through a mass of theory before he has a fair idea of the general phenomena ; thus in the introductory chapter on "Current Electricity," after a six-line description of a simple cell and current, over two pages are occupied in proving that the effects produced could be explained by the dissociation and procession of the hydrogen and oxygen atoms. The work is generally remarkably free from errors and misprints, but one occurs in the explanation just mentioned. The attraction of zinc for oxygen is said to be much greater than that of the copper, while later the zinc is also considered "to *repel* hydrogen *less*." Here, and in many other instances, the words to be emphasised are printed in italics. Another mistake will be found on pp. 168 and 169, where in comparing, by the method of oscillations, the field due to a magnet with that of the earth, the author starts with the equation $\frac{I+H}{I}=\frac{n_1^2}{n^2}$ instead of $\frac{I+H}{H}=\frac{n_1^2}{n^2}$, and reasoning correctly from this false hypothesis, he deduces false results, while the answer to Ex. 8 on this part of the subject appears incorrect. Fig. 13, p. 201, in illustration of Oerstedt's experiment, is not correctly drawn.

The arrangement of "calculations" and examples at the end of each chapter must prove extremely useful to students possessing beforehand an elementary knowledge of the general phenomena, and to such, rather than to the very beginner, the book may be commended. H. S. J.

Manners and Monuments of Prehistoric Peoples. By the Marquis de Nadaillac. Translated by Nancy Bell (N. D'Anvers). (New York and London : G. P. Putnam's Sons, 1892.)

A BOOK summing up in a popular style all that is now known with regard to prehistoric man would probably be welcomed by a tolerably large class of readers. The present work does not quite supply the kind of summary that is wanted. The author does not distinguish with sufficient clearness between the various periods with which he deals ; he indulges too freely in talk of a vaguely moralising tendency ; and some of his statements do not accord with the conclusions of the best authorities. Speaking of the Round Towers of Ireland, for instance, he says, "According to the point of view of different archæologists, they have been called temples of the sun, hermitages, phallic monuments, or signal towers." The reader is thus left to suppose that the question is still open, whereas all competent students of the subject accept the theory of the late Mr. Petrie, a theory which the Marquis de Nadaillac does not even mention. However, the author has presented a large number of interesting facts in the course of his exposition, and there are occasional passages in which he brings out very well the attractive elements of some of the more fascinating departments of archæology.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

Two Statements.

IN a letter addressed to the *Daily Chronicle*, dated January 25, 1893, Prof. Karl Pearson makes two statements respecting my opinions and grounds of action :

"As in society at large, so in academic matters, his mode of insuring progress is unlimited individual competition,"

and again :

"he is an individualist in all matters."

Seeing that in an essay "On Administrative Nihilism," published twenty-two years ago ; and in another on "Government : Anarchy or Regimentation," published in 1890, I have done my best to combat the doctrine Prof. Pearson attributes to me, I shall be glad to know what justification he has to offer for so grave a misrepresentation. The purpose of it is obvious.

T. H. HUXLEY.

Hodeslea, Eastbourne, January 29.

A Meteor.

THE following is taken from the Pretoria *Weekly Press* for January 7 : "A few evenings ago a meteor of unusual size and brilliancy was observed at Bloemfontein shooting right across the eastern sky. It looked like a rocket of a greenish colour, and burst in a shower of sparks in the south-east. The spectacle was much admired by those who were fortunate enough to witness it."

This meteor, as seen in South Africa, appears to have had many points in common with a similar one seen in England about the same time, and reported by several observers in the daily Press. W. L. DISTANT.

Purley, Surrey, January 31.

"Hare-lip" in Earthworms.

ATTENTION has recently been drawn by Prof. Andrews (*American Naturalist*, September, 1892) and myself (*Science Gossip*, 1892) to some abnormal conditions of life among the terrestrial annelids. I have now to place on record a totally new appearance, which is, I think, very aptly expressed by the term "hare-lip." The worm which I have had under examination presented the peculiarity figured below, and when alive and in motion suggested to my mind most forcibly the appearance which we associate with the name I have adopted.

The specimen in question belongs to the genus Allolobophora, in which genus, so far as my experience goes, almost all the abnormalities are found. The genus Lumbricus, it should be observed, is very seldom, if ever, known to present any of these peculiarities. Hitherto the Long worm (*A. longa*, Ude) has been most prolific of bifurcated heads and tails. Now we find the Green worm (*A. chlorotica*, Savigny) yielding new features for study. The peculiarities which have presented themselves in former times have usually taken the form of a second head or a supernumerary tail. In this instance there is no off-growth, however, but merely a malformation of the anterior segments. One might have supposed that the peculiarity was due to accidental causes. It would have been easy to suppose that the head had been split, and then the wound had healed, leaving a seam down the middle. I observed, however, that each of the three specimens of the Green worm which I received from Cork (Ireland) showed some abnormal feature, and there were other peculiarities in this particular specimen which indicated that we had to deal with a congenital rather than an accidental condition of things.

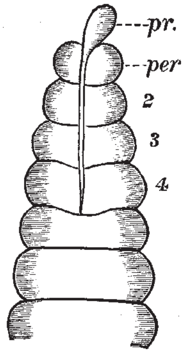

Diagram of the anterior portion of green-worm (*Allolobophora chlorotica*, Savigny), showing abnormal appearance of lip (*pr*), peristomium (*per*), and three succeeding segments, seen from above, and enlarged.

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